CAIT
Center for Advanced Infrastructure & Transportation
Rutgers, The State University of New Jersey

QUARTERLY PROGRESS REPORT

Project Title:	Evaluation of Poisson's Ratio
RFP NUMBER:	NJDOT RESEARCH PROJECT MANAGER: Mr. Anthony Chmiel
TASK ORDER NUMBER/Study Number: Task Order No. 128 / 4-2xxxx	PRINCIPAL INVESTIGATOR: Dr. Ali Maher/ Thomas Bennert
Study Start Date: 01/14/2003 Study End Date: 01/31/2005	Period Covered: 1st Quarter 2003

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Literature Search/Sensitivity Analysis	10%	50%	50%	5%
1. Material Collection	5%	33%	33%	1.65%
2. Laboratory Testing	65%	0%	0%	0%
3. Calibration	10%	0%	0%	0%
4. Reporting	10%	0%	0%	0%
Final Report				
TOTAL	100%			6.45%

1. Progress this quarter by task:
   - A. A literature concluded that many researchers have found the value of the Poisson's ratio to vary when measuring radial deflections in conjunction with axial deflections. Some of the more popular work coming from University of Minnesota, University of Illinois, and Notingham University in the U.K. Results of aggregate base course materials have shown to vary from 0.05 to 0.5, depending on the source. Work conducted at University of Illinois shows a strong relationship between the bulk stress and the Poisson's ratio when radial deflections are measured during the resilient modulus test.
   - B. Conducted a sensitivity analysis evaluating the effects of the Poisson's ratio on the determination of modulus values from elastic layer theory. Results show that from extreme values, 0.1 to 0.5, the greatest potential for modulus error occurs in both the base/subbase and subgrade layers. Errors as high as 40% can occur in the modulus determination.
   - C. The testing system is currently being calibrated with synthetic samples to assure that the measurements are correct. The material selected has been used by other researchers in validating the use of radial measurement devices, so there exists a good database of Poisson's ratio to compare results. It is anticipated that testing will begin the following quarter.

2. Proposed activities for next quarter by task:
   - A. Testing should begin on the Poisson's ratio measurement of aggregate materials for base and subbase applications. As long as calibration is correct, initial results should be available for the 2nd quarter quarterly report.

3. List of deliverables provided in this quarter by task (product date)
   N.A.

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4. Progress on Implementation and Training Activities

N.A.

5. Problems/Proposed Solutions

N.A.

6. Budget Summary*

Total Project Budget(# of years)	2 Years	$308,087
Total Project Expenditure to date		$0
% of Total Project Budget Expended		0%
Task Order Number/Study Number:		128 / 4-2xxxx
Current Task Order Budget (# of years)	Year 1 and 2	$308,087
Actual Expenditure to date against current task order		$0
% of current task order budget expended		0%

* These are approximate expended amounts for the project; these estimates are for reference only and should not be used for official accounting purposes. For a more accurate project accounting please review the quarterly invoice for this project.